

**What is claimed is:**

1           1.     A circuit board comprising: a dielectric substrate, a grounding surface  
2     formed on at least one surface of the dielectric substrate, and transmission lines  
3     formed on one surface of the dielectric substrate for transmitting electrical signals,  
4     wherein at least a portion of each of the transmission lines is isolated from an upper  
5     surface of the dielectric substrate to reduce an effective permittivity between the  
6     transmission lines and the grounding surface and reduce dielectric loss.

1           2.     The circuit board of claim 1, further comprising a plurality of supporters  
2     for supporting the transmission lines, between the dielectric substrate and each of  
3     the transmission lines in order to isolate the transmission lines a predetermined  
4     interval apart from the upper surface of the dielectric substrate.

1           3.     The circuit board of claim 2, further comprising a pad installed at least  
2     one end of each of the transmission lines.

1           4.     The circuit board of claim 1, further comprising a pad installed at least one  
2     end of each of the transmission lines.

1           5.     A circuit board comprising: a dielectric substrate, a grounding surface  
2     formed on at least one surface of the dielectric substrate, and transmission lines  
3     formed on one surface of the dielectric substrate for transmitting electrical signals,  
4     wherein at least a portion of each of the transmission lines is isolated from the upper  
5     surface of the dielectric substrate to reduce an effective permittivity between the  
6     transmission lines and the grounding surface and reduce dielectric loss, and a cap  
7     which covers the transmission lines, one end of the cap being grounded to the  
8     grounding surface.

1           6.     The circuit board of claim 5, further comprising a plurality of supporters  
2     for supporting the transmission lines, between the dielectric substrate and each of  
3     the transmission lines in order to isolate the transmission lines a predetermined  
4     interval apart from the upper surface of the dielectric substrate.

1           7.     The circuit board of claim 6, wherein an inside of the cap is in a  
2 vacuum state.

1           8.     The circuit board of claim 6, further comprising a pad installed at at  
2 least one end of each of the transmission lines.

1           9.     The circuit board of claim 7, wherein the transmission lines are  
2 installed on one surface of the dielectric substrate, the grounding surface is formed  
3 on an opposite surface of the dielectric substrate, and a conducting electrode is  
4 installed, one end of which is connected to the cap and the other is grounded to the  
5 grounding surface through the dielectric substrate so that the cap is grounded to the  
6 grounding surface.

1           10.    The circuit board of claim 5, wherein an inside of the cap is in a  
2 vacuum state.

1           11.    The circuit board of claim 5, further comprising a pad installed at at  
2 least one end of each of the transmission lines.

1           12.    A method of manufacturing a circuit board, comprising:  
2 forming a sacrificial layer of a predetermined thickness on a dielectric  
3 substrate;  
4 forming supporter patterns and transmission lines patterns by patterning the  
5 sacrificial layer, and forming supporters and transmission lines in the supporter  
6 patterns and transmission line patterns;  
7 removing the sacrificial layer so that the transmission lines are isolated from  
8 an upper surface of the dielectric substrate; and  
9 forming a grounding surface on at least one surface of the dielectric  
10 substrate.

1           13.    The method of claim 12, wherein forming the supporter patterns and  
2 transmission line patterns and the supporters and transmission lines comprises:  
3 forming supporter patterns by patterning the sacrificial layer;

4 forming supporters in the supporter patterns;  
5 forming another sacrificial layer of the sacrificial layer to a predetermined  
6 height;  
7 forming transmission line patterns by patterning the other sacrificial layer; and  
8 forming transmission lines in the transmission line patterns.

1 14. The method of claim 13, further comprising forming a cap for covering  
2 the transmission lines, one end of the cap being grounded to the grounding surface.

1 15. The method of claim 14, wherein an inside of the cap is in a vacuum  
2 state.

1 16. The method of claim 12, further comprising forming a cap for covering  
2 the transmission lines, one end of the cap being grounded to the grounding surface.

1 17. A method of manufacturing a circuit board, comprising:  
2 coating a dielectric substrate with a first polymer to a predetermined height,  
3 depositing an adhesive layer and a seed layer on the first polymer, and patterning  
4 the seed layer, thereby forming support corresponding regions, pad corresponding  
5 regions and ground corresponding regions;  
6 coating the patterned seed layer with a second polymer, and patterning and  
7 plating the second polymer, thereby forming a metal layer for transmission lines;  
8 anisotropically etching exposed portions of the first polymer after removing  
9 the second polymer and etching the adhesive layer; and  
10 forming supporters by isotropically etching a portion of the first polymer below  
11 the metal layer for transmission lines.

1 18. The method of claim 17, wherein the seed layer is patterned so that  
2 the support corresponding regions, the pad corresponding regions and the ground  
3 corresponding regions are wider than the metal layer for transmission lines.

1 19. The method of claim 18, further comprising forming a cap for covering  
2 the transmission lines, one end of the cap being grounded to the grounding surface.

1           20.    The method of claim 19, wherein an inside of the cap is in a vacuum  
2   state.

1           21.    The method of claim 17, further comprising forming a cap for covering  
2   the transmission lines, one end of the cap being grounded to the grounding surface.